EFFECTS OF FASTING ON RENAL FUNCTION OF PATIENTS WITH AUTOSOMAL DOMINANT POLYCYSTIC KIDNEY DISEASE

Iskender Ekinci[1], Rumeyza Kazancioglu[2], Reha Erkoc[2], Elif Kilic[3], Elif Ece Dogan[1], Meltem Gursu[2], Egemen Cebeci[4], Savas Ozturk[5]

[1] Bezmialem Vakif University Department of Internal Medicine, Istanbul, Turkey, [2]Bezmialem Vakif University Department of Nephrology, Istanbul, Turkey, [3]Bezmialem Vakif University Department of Biochemistry, Istanbul, Turkey [4]Okmeydani Training and Research Hospital Department of Nephrology, Istanbul, Turkey, [5]Haseki Training and Research Hospital Department of Nephrology, Istanbul, Turkey.

Objectives:

Fasting means abstain from food and drink from sunrise to sunset in month of Ramadan and duration of the fasting ranges from 10 to 18 h per day (approximately17 h in this study). Fasting can be a possible risk factor for renal function impairment considering that dehydration is a well-known cause of kidney failure (1). In this study we aimed to evaluate this condition in autosomal dominant polycystic kidney disease (ADPKD) patients.

Methods:

This prospective observational study was conducted with 52 patients with ADPKD. Patients were divided into 2 groups according to fasting group (FG) and non-fasting group (NFG). The NFG were seen a week before Ramadan (BR) and a month after Ramadan (AR). The FG were seen the last day of the fasting (ER) in addition to the above visits. The following parameters were checked at each visit: Systolic blood pressure (SBP), diastolic blood pressure (DBP) weight, Na, K, creatinine, glucose, lipid profile, urine density, 24-hour urine volume, 24-hour urine protein and GFR. The urine samples were taken from each patient for neutrophil gelatinase-associated lipocalin (NGAL) and kidney injury molecule-1 (KIM-1) in all visits. Kidney function tests were analyzed on the 7th day of fasting in FG for identify early kidney damage.

Results:

Of the remaining 52 patients there were 21 patients in FG (4/17, M/F) and 31 patients in NFG (13/18 M/F). There was no significant difference between two groups in term of age, gender, disease duration and presence of hypertension (Table-1). During the follow-up period there was no significant change observed in SBP, DBP, weight, creatinine, albumin, lipid profile, urine density, 24-hour urine volume, NGAL, KIM-1 and GFR in both groups (Table-2). 24-hour urine protein was significantly decreased in FG.

Table-1: Demographic data of the groups

	FG	NFG	
	Ort.±SD	Ort.±SD	p
Age, (years)	45±11	47±14	0.48
Gender (Male/Female)	4/17	13/18	0.08
Disease duration (years)	10.4±8.2	12.5±8.4	0.33
Presence of HT	10(%47.6)	22 (%71.0)	0.08

Table-2: Biochemical data of the groups

	PR	ER	AR	*p*
Fasting group				
Creatinine (mg/dl)	0.84±0.20	0.85±0.17	0.85±0.19	0.725
Urine volume(ml/day)	2450±910	2142±591	2198±756	0.110
Urinary protein (mg/day)	283±123	245±86	207±79	**0.001**
NGAL (pg/ml)	122.8±116.0	136.8±125.2	247.2±235.4	0.102
KIM-1 (pg/ml)	1102.8±630.1	1103.0±638.0	1170.7±681.2	0.709
GFR (ml/min)	87±18	85±21	86±19	0.588
Glucose (mg/dl)	96.6±11.2	103.4±12.3	93.5±13.0	**<0.001**
Non-fasting group				
Creatinine (mg/dl)	1.53±1.08		1.64±1.33	0.159
Urine volume(ml/day)	2353±1236		2402±972	0.728
Urinary protein (mg/day)	718±1436		637±1270	0.071
NGAL (pg/ml)	143.9±135.8		146.3±121.8	0.410
KIM-1 (pg/ml)	1356.2±684.3		1559.8±588.8	0.068
GFR (ml/dk)	66±36		64±36	0.471
Glucose (mg/dl)	96.2±15.8		99.3±17.9	0.220

Conclusions:

Fasting did not affect renal functions negatively in patients with early stages of chronic kidney disease due to ADPKD, besides it did not cause a significant change in markers of acute kidney injury. Daily urinary protein was significantly reduced in FG.

References:

1. John Harty. Prevention and Management of Acute Kidney Injury. Ulster Med J. 2014 Sep; 83(3): 149–157

DOI: 10.3252/pso.eu.53era.2016

ePosters supported by F. Hoffmann- La Roche Ltd.

53rd CONGRESS ERA-EDTA VIENNA AUSTRIA MAY 21st-24th, 2016 Held jointly with Österreichische Gesellschaft für Nephrologie

PosterSessionOnline.com